



UNIVERSITY
OF MICHIGAN
OCT 29 1956
PUBLIC HEALTH
LIBRARY

California's Health

Vol. 14, No. 8 · Published twice monthly · October 15, 1956

THE USE AND MISUSE OF PESTICIDES*

J. L. AVERY, District Inspector, Bureau of Chemistry, State Department of Agriculture

The early history of this country discloses the struggle of the colonists to protect their crops against the attack by predatory animals and bird life. It has, of course, to some extent always been necessary for a farmer to observe some form of plant protection, but in recent years he has had to wage almost constant warfare against insects, plant disease, weeds, and rodents. There are still men living who can remember when it was possible to raise apples without spraying. The cultivated plant is the battleground where the ambitions of man meet and collide with the many organisms of nature. Since 1939 the pesticide industry has grown from 40 to 200 million dollars in sales. It has been said with some accuracy that for every dollar spent on insecticides by the farmer, \$52 are returned. Even so, we are told that the annual loss to crops as a result of insect attack is around 4 billion dollars.

Pesticides are increasing the world food supply for millions of people by increasing the production of agricultural crops. Pesticides are also aiding in the suppression of diseases which have deprived the people of many nations of their vitality and incentive to produce.

We are told that if it were not for the farmer's constant vigil in protecting his crops, and the constant search for new controls of pests, we would all soon starve.

Pesticides are probably more closely regulated than any other class of materials sold generally. The federal law controlling pesticides covers all interstate shipments, and many states have laws that supplement the federal law. In California, the economic poisons article of the Agricultural Code is vigorously enforced by the Bureau of Chemistry and has been in effect for many years.

Products Must Be Registered

The California law provides that each product must be registered before it can be legally sold in the State. Registration acts as a screen by which worthless and untried products are withheld from the market. Registration may be refused, after hearing, for any pesticide which is of little or no value for the purpose for which it is intended, or which is detrimental to vegetation, except weeds, to domestic animals, or to the public health and safety when properly used. When only a few standard chemicals were used in pest control, it was relatively simple, by referring to published information, to determine whether or not a product could be expected to do what was claimed for it. But with the development of the many new chemical compounds such as DDT, BHC, TEPP and parathion, it has been necessary to adjust procedures to evaluate the usefulness and hazards of the new materials. Many manufacturers carry on their own research and have extensive investigational staffs, and the data they present are given careful considera-

tion in connection with the registration of a new chemical. A manufacturer must not, however, experiment at the expense of a user.

The type of container used for a pesticide sometimes is a determining factor as to whether or not it is eligible for registration under California law. For example, in some states ordinary bottle caps are filled with a sweetened bait, impregnated with arsenic and sold for ant control. California has repeatedly declined to register such a device, because of the undue hazard for children. Likewise, collapsible tubes containing poisonous pesticides have been rejected for registration because as the tube is rolled up from the bottom, caution warnings, poison labels, and antidotes are concealed.

To be of most value to the user, the label of a pesticide must carry adequate directions for use, proper statement of ingredients, and any required caution. Also, if required, the poison label must be displayed with the prescribed first aid antidote. Many mistakes, some tragic, are caused by failure to read, or failure to follow directions, warnings, and cautions shown on the label. There are over 12,000 pesticide labels registered in California, and each of these was given careful detailed review prior to acceptability under the law. The label is the guide to the proper use of pesticides.

Some Chemicals Are Highly Toxic

Although the development and use of the newer insecticides and rodenticides has been of tremendous benefit

*Presented at the Institute on Industrial Health Practices sponsored by the California Department of Public Health, Bureau of Adult Health, at the University of California, June 21-22, 1956.

to agriculture and public health throughout the world, some of the chemicals we are using are so highly toxic that great care and caution is necessary in their use and handling. In California, certain materials such as parathion and TEPP are considered so highly toxic that under law it is necessary to secure permits before they can be used, and these chemicals are not available to householders for home or garden use. For example, as to toxicity, one drop of pure parathion in a person's eye might be fatal. It is quickly absorbed in this manner. Likewise, a teaspoonful of TEPP absorbed through the skin could be fatal. There are, however, numerous insecticides available to the homeowner for use in the garden and in the house. These include arsenical ant poisons, arsenical snail baits, various formulations including lindane, pipernyl, butoxide, rotenone, pyrethrins, malathion and other similar materials.

It is well to remember that the label, which we have mentioned before, on these products is the key to their use. It is of the utmost importance to read the label carefully, prior to using the product. It is not a smart idea to combine two or more insecticides, or add additional ingredients such as solvents unless the label specifically so states. In Sacramento not long ago a householder purchased a specific material to use under his home to control termites. He thought he would improve the toxicity of the formulation by adding a solvent. He was overcome by the fumes of the solvent, and the fire department had to pull him out into the open air. Many people don't realize that solvents, such as carbon tetrachloride, xylene, and benzol are sometimes much more toxic than the active ingredients in the insecticide itself. About a year ago, the State Division of Safety listed a number of fatalities caused by carbon tetrachloride, a commonly used solvent. One of these instances involved a man who used carbon tetrachloride to extinguish a fire in the front seat of his car. He then sat on the saturated seat and drove some distance. He died 12 days later from inhalation of carbon tetrachloride fumes.

The possible danger in the use of volatile solvents, some of which are

inflammable, and possibly explosive, cannot be overemphasized. A few years ago, a young motorcycle officer decided his job was too hazardous and embarked upon a career as a structural pest control operator. He did so without any previous experience or training in the use and application of pesticides. In fact, he did not bother to apply for a structural pest control license, which he could not secure without first taking an examination given by the Structural Pest Control Board. He used a conventional type of insecticide, with a kerosene base. He also used a vaporizing machine, which was placed in operation underneath the house, a new duplex. But he neglected to turn off the furnace pilot light. The resulting accumulation of vaporized fumes reached the required concentration with air, and the explosion that ensued wrecked the building and put the pest control operator in the hospital.

You may have read a report a few weeks ago concerning a householder who was using a gasoline flame thrower to burn weeds on his property. Unknown to him, there was a pinhole leak in the tank, and his clothing became saturated and burst into flames. He became a human torch. This again, of course, involves a volatile material. If the label on the insecticide you are using admonishes you to "keep away from naked flame," by all means do so.

Information has been developed to show that a large percentage of household accidents involving children are attributed to ordinary kerosene. It has appeared justifiable to limit any claims for safety on the labels of fly sprays and other products containing petroleum distillates, and in addition to require warnings to keep such products away from children. Orderly correction of exorbitant labeling is going on, and new precautions are being required, based on solvent hazards.

Arsenic trioxide solution, sold as a 40 percent concentrate for soil sterilization, is often used underneath homes in a 5 percent dilution to saturate the soil next to the foundation, for termite control. More than one homeowner, however, has discovered that the chemical can penetrate to the outside underneath the foundation, and destroy valuable shrubbery. The answer is to use it sparingly, and

above all according to directions. Some of the fatalities and injuries involving these chemical pesticides are due to accident, some are due to ignorance, but most of them are attributable to carelessness in handling, or failure to observe warnings and cautions on the label.

In Lake County, a few years ago, a Mexican national, observing a one-gallon can of 20 percent TEPP concentrate, applied the undiluted material direct to his body in an effort to control pubic lice. He died about four hours later. Either he could not or did not read the label, which did give adequate warning.

First Aid Knowledge Important

Familiarity with first aid requirements can sometimes make a tremendous difference. In certain sections of the San Joaquin Valley, sulfuric acid is applied to the soil to counteract excessive alkalinity. In 1954, 2,245 tons of this material was applied to the soil. Several years ago, a farmer was unfortunate enough to have spilled on his bare arm a quantity of undiluted H_2SO_4 . Instead of plunging his arm into an irrigation ditch full of water, close by, he got into his car and drove for 20 minutes to the nearest doctor's office. He almost lost his arm, and did lose most of the flesh on the forearm.

If the label displays a warning to avoid using the pesticide near pets, such as goldfish or caged birds, the warning should be carefully observed. Some of the insecticides are quite toxic to birds and fish. One of these is rotenone, a botanical derivative, which owes its discovery to the fact that it is capable of stunning fish.

When commercial pest control operators use this material near a fish pond, they first cover the pond with a tarpaulin.

One of the most popular types of household insecticides is the aerosol container. This type of container expels the material under pressure, using propellants such as Freon (a refrigerant). The material is applied by exerting pressure on a valve at the top of the can. A typical caution label on this type of insecticide will probably state, "Store in a cool place away from heat. Do not puncture dispenser. Remove fish bowls and bird cages from room before using aerosol. Never

spray plastics or asphalt tile direct." Very simple directions and easy to follow, but how seriously one could get into trouble if the directions for use were read after using. One woman came into our San Francisco office with an aerosol container and a bandaged thumb. She declared that a portion of the thumb was frozen sufficiently to require medical attention, as a result of using the aerosol bomb. No doubt she held her thumb over the jet while pressing on the valve.

Reports are occasionally received that dogs have been poisoned by snail and slug baits. Practically all such baits that are in common use today are made of a mixture containing bran, of a fineness sufficient to permit the snail or slug to pick it up, arsenic trioxide, and meta-acetaldehyde. The latter material is similar to the product known as canned heat. It is an attractant, and the pests are drawn to it much in the same manner that a moth is attracted to a light. Most labels direct that the material (snail bait) be applied to damp ground in amounts equivalent to a teaspoonful about every three feet. If there are pets in the area, it is best to place the material under stones, or slightly raised boards, and, in any event, use no more than the directions state. The reason for the small piles is to avoid a loss of the metaldehyde attractant, which might be quickly dissipated by scattering.

If a label says "avoid excessive inhalation," it means just that. If it says "avoid contact with the skin, and wash with soap and water after using," that is what it means. These warnings and admonitions are not placed on the label for idle purposes. They appear on the label for two principal reasons: (1) the law requires it; and (2) the manufacturer wants to be sure he will not be held responsible for failing to warn the user, should a damage suit occur as a result of injury.

Residue Problem

In general, on the subject of applying pesticide to garden crops, it should be remembered that some types of chemicals are quickly dissipated and others are persistent. In other words, pesticides in the first category would not be expected to cause a residue problem, while the latter might.

It is well known, for instance, that any of the metallic poisons, such as arsenic or lead, will remain until removed, while, on the other hand, the newer synthetic organic compounds are dissipated in a matter of weeks or days, depending upon the chemical and weather conditions.

In the preparation of agricultural crops for market, the remaining pesticide residues are brought within legal tolerances by washing and trimming. In this connection, it is perhaps worthy of mention to state that the Bureau of Chemistry makes daily early morning inspections of wholesale produce markets throughout the State, for the purpose of detecting produce suspected of carrying excessive pesticide residues. Any product suspected of carrying residue is promptly quarantined out of sale, pending chemical analysis. If the residue is found to be above legal tolerance, the produce is either reconditioned by trimming or washing, or it is dumped.

Pest Control License

Anyone who engages for hire in the business of pest control must secure from the Bureau of Chemistry an agricultural pest control license covering the type of pest control in which he proposes to engage. This license does not include structural pest control, which is regulated under the Business and Professions Code. Licensed agricultural pest control operators are required to register with the agricultural commissioner of each county in which they operate, and submit to the commissioner monthly reports on work done in each county. A pilot who operates aircraft in the business of pest control must be examined by the Department of Agriculture and secure a certificate of qualification. The application of pesticides by aircraft is definitely increasing. In 1955, 4,800,000 acres were treated from the air; an increase of almost 1,000,000 acres over 1954.

Sometimes accidents involve a bottle or package of pesticide that has been left behind by a former tenant or occupant. Household, gardeners, and particularly parents, should be urged to inspect their homes, gardens and garages to determine if remnants of such poisons are present. Sometimes small amounts, purchased years before, are found by children.

Do This

In general, and in conclusion, I should like to emphasize six points which we believe have a bearing on the use and misuse of pesticides; especially by the homeowner:

- (1) Read the label.
- (2) Observe and follow all directions and cautions on the label.
- (3) Do not mix two or more pesticides, or add a solvent unless labels so direct.
- (4) Store pesticides away from children, animals and irresponsible persons, under lock and key.
- (5) Always keep chemicals in original labeled containers.
- (6) Dispose of empty containers safely.

Mental Health Survey Initiated by Orange County

A study of mental health problems is being undertaken in Orange County under the sponsorship of the Orange County Medical Association and the Orange County Council of Community Agencies. A series of one-week surveys of physicians, clergymen, school personnel, law enforcement agencies, official and voluntary health and welfare agencies who deal with mental health problems will be used to determine work loads in the field of mental health.

Under this system, a check list developed by the U. C. L. A. School of Medicine will be used by professional personnel to tabulate the numbers of persons they serve who are faced primarily with mental and emotional problems.

Health Officer Changes

Modesto City

Irena A. Heindl, M.D., has been appointed health officer for the Modesto City Health Department, succeeding the late Mr. Mark Landquist. Dr. Heindl also serves as health officer for the Modesto County Health Department.

Dairy Valley City

The newly incorporated City of Dairy Valley will be served by the Los Angeles County Health Department, Roy Gilbert, M.D., health officer.

Regulations Proposed to Govern Recreational Uses of Reservoirs

Proposed State Health Department regulations governing the use of domestic water supply reservoirs for recreational purposes were considered in informal public meetings in Los Angeles and Berkeley during September.

The meetings were held to give interested persons opportunity to suggest additions or revision to the proposed regulations before they are submitted for approval before the December meeting of the State Board of Public Health.

The regulations would require any water purveyor proposing to utilize a reservoir and surrounding area for recreational use to apply for a permit from the State Board of Public Health; this formalizes a policy under which the department has been operating. Elements of the proposed regulations are: The application must include a statement of intended recreational use and a description of the controls proposed to protect the water supply; the plan must be approved by the governing board of the water purveyor, and provision must be made for public health supervision of the recreational area facilities.

Recreational uses permitted on reservoirs would not include wading, bathing, or swimming by persons or animals, nor would permits be granted for recreational use of distribution reservoirs.

Representatives from sportsmen's associations, water purveyors, local health departments, State Department of Fish and Game, State Department of Water Resources, University of California, United States Bureau of Reclamation and United States Public Health Service attended the meetings. Also in attendance at the Berkeley meeting was a member of the Assembly and Senate Interim Committee on Recreation, State Beaches and Parks.

In addition to these informal discussions, interested persons may present their views in public hearing before the State Board of Public Health at its December meeting on the proposed regulations.

Polio Incidence Continues at Low Level

Poliomyelitis incidence in the United States is remaining at an unusually low level this year. Reported cases for the current disease year, April 1st to September 1st, were approximately one-half those reported during the equivalent period in 1955. As of September 1st, 7,827 cases had been reported as compared to 15,128 at this time last year.

Current Surveillance in California

California is experiencing a slightly higher incidence of poliomyelitis this current disease year than in 1955—1,048 cases as compared with 913. However, incidence declined during the two-week period, August 25th to September 8th, continuing for the second two-week period an unusual downward trend for this time of the year. The number of cases for the four-week period, August 11th to September 8th, has fallen well below the five-year median as noted in the accompanying table.

The proportion of paralytic cases, though still somewhat higher than last year—64 percent as compared with 52 percent—also appears to be gradually declining. During August, 56 percent of the reported cases were

listed as paralytic as compared with 71 percent in July.

Vaccine Evaluation

Paralytic polio has been reduced 85 percent for children who have received two inoculations or more. The total incidence of polio in the vaccinated population has been reduced approximately 70 to 75 percent.

Of 1,048 polio cases reported this disease year as of September 8th, only 134 (13 percent) had received at least one inoculation of polio vaccine at some time prior to onset. Of 673 paralytic cases reported this year, 604 (approximately 90 percent) had received no inoculation, 34 (5 percent) had a single inoculation, and the remaining 35 (5 percent) had two or more inoculations prior to onset.

It is estimated that only half of the children under 15 years of age in California have been vaccinated. Very few inoculations have as yet been given in the 15-19 and 20-40 age group. Increased effort to include these groups is desirable because approximately one-third of all poliomyelitis cases occur in people over 15 years of age.

Two-week period				1955				Five-year median 1951-1955			
ending				Total	Par	%P		Total	Par	%P	
August 11	-----	188	96	51	97	44	45	197	128	65	
August 25	-----	147	94	64	152	70	46	230	140	61	
September 8	-----	119	70	59	122	69	57	297	182	61	

Esther Spencer Accepts Foreign Assignment

Mrs. Esther Spencer, Chief, Social Service, State Department of Public Health, has accepted a year's foreign assignment and will be on loan to Union Mondiale from November 15, 1956, to November 15, 1957. While assigned to the agency, Mrs. Spencer will work with a team of physicians and nurses. Her particular responsibility will be to help the agency establish a social work program. Her title will be Chief Consultant on Social Service in Health Problems.

The Union Mondiale is a relatively new international voluntary agency with headquarters in Paris, France. The agency's program is in the field of medical care and is primarily con-

cerned with refugees and displaced persons. Branch offices are located in Switzerland, Italy, North Africa and Israel.

Mrs. Spencer joined the department in June, 1952, as Chief of Social Service. In her absence Miss Constance Grass will be acting chief.

Ireland, Northern Ireland, Chile, Scotland and Spain have the lowest rates for suicide while Japan, Denmark, Austria and Switzerland have the highest. The rates ranged from 2.0 deaths per 100,000 in Ireland to 23.4 in Japan. The reported suicide rate for the United States in 1954 was 10.1 per 100,000 for all races combined. The rate for white people is almost three times that for the non-white population.

Public Health Representatives From 26 Countries Visit Department

Sixty-six representatives from 26 countries visited the State Department of Public Health during the months of June, July and August. For most of them, their itineraries also took them into local health departments.

The visitors discussed public health problems in their countries, relating their own experience with programs and problems observed here.

The names and positions of the recent visitors are:

AFRICA

Egypt

Major M. H. Dakn, M.D., Chief Veterinarian Officer, Frontier Corps, Cairo.
Dr. Nemat Hashem Nour El-Din, Lecturer in Pediatrics, Faculty of Medicine, Cairo University, and Physician Kasr El Einy, Children's Hospital, Cairo.

Mozambique

Dr. Deolinda da Costa Martins, School Physician and Professor of Physical Education, Africa Oriental Portuguesa.

Union of South Africa

Miss Aileen D. Moddie, Chief Medical Social Worker, Department of Medicine, University of Capetown, Capetown.

ASIA

Iran

Dr. Anyat Moayyad, Codirector of Public Health Cooperative Organization, Kermanshah.
Mr. Mohammed Assadi, Director General to the Ministry of Health, Tehran.

Iraq

Dr. Jamal A. H. Al-Azzawi, Physician, Prison Hospital.
Dr. Abdul Jabbar Akif Ridha Rizali, Chief Inspector of Health, Ministry of Social Affairs, Baghdad.
Dr. Mohamed Hasan Salman, Member of Parliament, formerly Minister of Health and Minister of Education, Baghdad.

Formosa

Ming-Tsu Hung, Assistant Engineer, Public Works Department of Reconstruction, Provincial Government, Taipei.
Chung Yuan Shieh, Assistant Engineer, Public Works Service Corps, Provincial Department of Reconstruction, Taipei.
Dr. Wan-I Chen, Chief, Engineering Section, Taiwan Provincial Malaria Research Institute.

Japan

Mitsuo Kambayashi, Assistant Chief, Public Sanitation Bureau, Ministry of Health, Tokyo.
Dr. Hidehiko Oka, Venereal Disease Division, Ministry of Health, Tokyo.

Korea

Dr. Il Chyu, Acting Chief of Bacteriological Section, National Institute for Prevention

of Infectious Diseases, Ministry of Health and Social Affairs, Seoul.

Dr. Yong Keun Kim, Superintendent, National Hospital, Ministry of Health, Seoul.
Dr. E. Hyock Kwon, Professor, School of Public Health, Seoul.
Dr. Chong Hak Lee, Director, National Health Center, Seoul.

Malaya

Dr. James Browne, Psychiatrist, Woodbridge Hospital, Singapore.

Ryukyus Islands

Eiichi Shimabuku, Medical Laboratory Technologist, Social Affairs Department, Naha City, Okinawa.

Philippines

Dominador Mendoza Apalisok, Field Sanitary Engineer, Bureau of Health, Manila.
Nestor Fabella Abaya, Sanitary Engineer, Department of Health, Manila.
Dr. Benjamin Z. Belen, Municipal Health Officer, Bureau of Health, Manila.
Dr. Jesus Butalid Caballos, Senior Resident Physician, Acting Chief of Hospital, Bureau of Hospitals, Manila.
Dr. Ricardo Angeles Climaco, City Health Officer, Zamboanga.

Manuel Ramiro Dominguez, Sanitary Engineer, Public Health Education and Training, Department of Health, Manila.

Dr. Ignacio C. de Guzman, City Health Officer, Dagupan, Pangasinan.

Jose Mateo Morales, Field Sanitary Engineer, Bureau of Health, Manila.

Dr. Asiselo Osteria, Municipal Health Officer, Bureau of Health, Manila.

Dr. James P. Parado, Municipal Health Officer, Bureau of Health, Manila.

Honorio D. Pasion, Supervisor of Health Education, Bureau of Public Schools, Manila.

Jorge Castro Ponce, Sanitary Engineer, Bureau of Health, Manila.

Felipe Lopez, Nurse-Administration Officer, Cashier and Property Clerk, Occidental Negros Provincial Hospital, Bacolid City, Bureau of Hospitals, Manila.

Ciriaco C. Magtiri, Design Engineer, Bureau of Public Works, Government of the Philippines.

Dr. Serafin R. Panggat, Senior Resident Physician, Laguna Provincial Hospital, Bureau of Hospitals, Manila.

Amando L. Soberano, Civil Engineer, Bureau of Public Works, Government of the Philippines, Manila, Paombang and Bulacan.

Dr. Tirso Navarro Briones, Chief, Bacteriology Section, and Assistant Chief, Division of Public Health Laboratory, Department of Health, Manila.

Dr. Artemio Medina Cabrera, Chief of Hospital, Masbate Provincial Hospital, Bureau of Hospitals, Manila.

Dr. Eufonio O. Carrasco, Manager, Philippine Rice Enrichment Program, Institute of Nutrition, Department of Health, Manila.

Dr. Angel Cruz del Corro, Chief, Pampanga Hospital, Bureau of Hospitals, Manila.

Dr. Rufio C. Guiterrez, Chief, Sulu Hospital, Bureau of Hospitals, Manila.

Dr. Artemio L. Jugo, Chief, Lanao General Hospital, Bureau of Hospitals, Manila.

Taiwan

Shu-yuan Soong, Division Chief, Third Division Census Registration and Administration, Department of Civil Affairs, Taiwan Province Government, Taipei.
Dr. Kuo-Yi Wang, Venereal Disease Officer, Department of Health, Taipei.

Thailand

Dr. Dunthorn Srihongse, Medical Officer and Chief, Malaria Control Unit Pras-Nan, Bangkok.

Miss Anotai Bhamarapravati, Pharmacist, Division of Nutrition, Department of Health, Thonburi.

ASIA MINOR

Turkey

Dr. Ali Riza Bakay, Director General, Department of Pharmaceuticals, Ministry of Health, Ankara.

Lebanon

Nadim Khallouf, Director, Chemistry Division, Central Public Health Laboratory, Beirut.

EUROPE

Italy

Dr. Giuseppe De Grada, Secretary, Health Education Committee, Ministry of Health, Rome.

Netherlands

Dr. J. W. Wolff, Director and Hygienist, Institute of Tropical Hygiene and Geographical Pathology, Amsterdam.

Poland

Dr. Capinski and Dr. Jezet Towpik, Associate Professor, Panstwowy Instytut Dermatologii i Wenerologii, Warsaw.

Yugoslavia

Mr. Mirko Francetic, University Professor, Faculty of Veterinary Medicine, Zagreb Heinzelora.

Mr. Peter Matijasevic, Veterinarian, Institute of Veterinary Medicine, Mostar.

Mr. Mihajlo Mirkovic, Manager, Livestock-Veterinary Station, District of Morava, Aleksinac.

Mr. Iran Sijakov, Veterinary Inspector, Main Administration of Veterinary Service of Macedonia, Skopje.

EAST INDIES

Netherlands New Guinea, Indonesia

Dr. Antoine Wouter Voors, Government Medical Officer.

CANADA

Miss Ena Rogerson, Medical Social Worker, Physical Restoration Division, Department of Health, Saskatchewan.

Hawaii

Mrs. Shirley Hayashi, Chief Psychiatric Social Worker, Division of Mental Health, Territory of Hawaii.

SOUTH AMERICA

Brazil

Dr. Octassio Correa Bittencourt, Doctor of Puericulture, National Children's Department, Government of Brazil.

Eduardo C. T. Bastos, Design Engineer, Chief of Reinforced Design Section of Engineering Division, Serviço Especial de Saude Publica, Rio de Janeiro.

Colombia

Dr. Rodrigo A. Solorzano, Assistant, Department of Preventive Medicine, Faculty of Medellin.

Ecuador

Dr. Miguel Eduardo Yopez, Physician, Departamento de Higiene Escolar Servicio Sanitario Nacional, Guayaquil.

Peru

Dr. Octavio Espinosa, Assistant Business Manager, Sub-Gerente del Servicio Cooperativo Inter-Americano de Salud Publica, Ministerio de Salud Publica, Lima.

Dr. Cesar Gordillo, Director, International Interchange Office and Professor of Medicine, Medical School, San Marcus University.

APHA Meets November 12-16

The 84th Annual Meeting of the American Public Health Association, which meets November 12-16, Convention Hall, Atlantic City, will have as its theme, "How Are We Doing in Public Health?"

The following personnel in the State Department of Public Health have been nominated for offices in their respective sections: Helen E. Walsh, secretary, food nutrition; Howard L. Bodily, Ph.D., vice chairman, laboratory; Paul W. Shipley, member of association nominating committee for elective councilors, statistics.

A listing of papers either co-authored or to be read by department personnel follows:

A Plan for Cooperation With the Coordinating Committee on Laboratory Methods. Howard L. Bodily, Ph.D., and Ferdinand R. Hassler, M.D.

On Evaluating the Child Health Conference. Leslie Corsa, Jr., M.D.

The Social Epidemiology of Prenatal Mortality. Esther C. Spencer, Arthur C. Hollister, Jr., M.D.

A Pattern for State-Local Relationships in Public Health Administration. John R. Philip, M.D.; Malcolm H. Merrill, M.D.

Should the Premarital Blood Test Be Compulsory? David Widelock, Ph.D.; William Levin, D.P.H.; Howard L. Bodily, Ph.D.; Harold J. Magnuson, M.D.

Uses and Limitations of the California Health Survey for Studying Epidemiology of Chronic Disease, Lester Breslow, M.D.

An Epidemiological Investigation of Coronary Heart Disease in California Health Survey Population. Robert M. Drake, M.D., and Lester Breslow, M.D.

The preliminary program of the scientific sessions and meetings of re-

Demonstration Projects Planned To Reduce Blindness Incidence

A series of projects to demonstrate what can be done to reduce the incidence of blindness in California will be undertaken this year. These projects are defined in the annual report of the department's project for prevention of blindness.

With a total program of vision conservation its ultimate objective, the project this year proposes demonstrations around the types of blindness on which, in a limited time, can be brought to bear the greatest impact of traditional public health procedures of education, early case finding, referral for medical care and follow-up.

During the 1956-57 Fiscal Year demonstration programs for prevention of blindness through early glaucoma detection and preschool vision screening will be carried on in as many favorable situations as possible to point out the practicability of public health programs in these fields. Glaucoma was selected on the basis that blindness due to this cause is preventable. In spite of this fact, it is the second leading cause of blindness in California, as elsewhere.

The report, submitted to the W. K. Kellogg Foundation, which has financed the project through annual grants, proposes two other objectives for this year. They are:

1. Increased attention to opportunities to shorten the time lag between discovery and application of knowledge. Within the field of blindness prevention there are two aspects of this problem of communication: first, the need to find and to utilize existing information in the field, and second, the responsibility to pass on project contributions which may be of value to others.

2. In the coming year an epidemiological study of glaucoma will be carried out. In this investigation, preliminary plans call for interviewing a sample population drawn from those blind from glaucoma, diagnosed cases under care, and cases previously unknown which were found in screen-

lated organizations appears in the September, 1956, issue of the *American Journal of Public Health*.

ing operations. The purpose of this study will be to describe in greater detail than is now known, the natural history of glaucoma occurrence. This study method is one of the unique contributions of public health to medical practice.

Reviewing the accomplishments of last year, the report cited several major investigations which throw light on the amount, causes and distribution of blindness in the population. Among the important findings are:

1. A study of 12,500 recipients of welfare aid for the blind and partially self-supporting blind provided the first description of this population to be made since 1941 and furnished information on the relative importance of the various causes of blindness among adults.

2. Reports of visual impairment gathered in the California Health Survey have been analyzed as a clue to the prevalence of such conditions in the general population.

3. All schools with classes for blind and partially sighted children, as well as the resident California School for the Blind and the Variety Club Blind Babies Foundation which provide services to preschool blind children, have made their records available for study and analyses of data on about 2,000 blind children will be completed soon.

W. Blake Christensen Recipient of Trudeau Award

W. Blake Christensen, Senior Bacteriologist, San Diego County Health Department, was presented the 1956 California Trudeau Award at the society's annual meeting for his paper on the development of a new culture medium for the tubercle bacillus.

The California Trudeau Award is given each year for the best paper on any pulmonary disease written by a member of the medical sciences. Mr. Christensen's paper was chosen as the best of 10 entries.

There is no health department that is not teeming with newsworthy stories of great public interest that can serve as health information and health education material.—Dr. Huntington Williams and Sir Allen Daley, Health Officers News Digest, 9-56.

Cases of Animal Rabies Remain High in California

The incidence of animal rabies has remained high in California this year. Since the first of the year through September, there were 261 reported cases of animal rabies. For the same period in 1955, also a "high incidence" year, there were 299 reported cases.

The breakdown of incidence by species shows that there were 125 cases of rabies which occurred in dogs and

98 in skunks, as compared to 157 and 107, respectively, last year. All but four of the rabid dogs were from the southern part of the State; primarily in Los Angeles and Orange Counties. Three of the rabid skunks were household pets.

Twenty-seven counties have had no reported cases of animal rabies this year.

The table below summarizes reported cases of animal rabies in California by species and county:

Cases of Animal Rabies by Species—California Counties

January 1-September 26, 1956 (Provisional)

County	Total	Dog	Skunk	Cat	Cattle	Goat	Hog	Fox	Horse	Gopher	Bat
California total	261	125	98	4	27	1	1	1	1	1	2
Northern Area	97	4	85	1	3			1	1		2
Amador	1		1								
Butte	7	1	6								
Calaveras	2		1					1			
Contra Costa	2		1		1						
Fresno	2		2								
Glenn	2		2								
Humboldt	2		2								
Lake	3		3								
Madera	1	1									
Marin	3		3								
Mendocino	1		1								
Merced	5		5								
Monterey	10		9	1							
Napa	18	1	16		1						
Placer	1		1								
Sacramento	3	1	2								
San Joaquin	11		11								
Santa Barbara	2		2								
Santa Clara	2		1								1
Shasta	3		2								1
Solano	2		1						1		
Sonoma	3		2		1						
Sutter	1		1								
Tehama	3		3								
Tulare	3		3								
Tuolumne	3		3								
Yolo	1		1								
Southern Area	164	121	13	3	24	1	1			1	
Los Angeles											
City	33	32		1							
County	84	55		2	24	1	1			1	
Orange	32	32									
Riverside	1		1								
Ventura	14	2	12								

* Pet skunks.

* "Cret cat" or spotted skunk, a pet shipped from Texas.

SOURCE: State of California, Department of Public Health, Morbidity Records. These reports include number of cases from morbidity reports, also unreported cases confirmed by laboratory tests.

Fluoridation for the entire area served by the Chicago water supply went into effect August 1st. This brought to 28,543,799 persons in the United States receiving fluoridated water.—Council on Dental Health of the American Dental Association.

Nicotine intoxication can cause diminished visual acuity, and the inability to distinguish red. The use of alcohol * * * can increase the effects of nicotine intoxication until it becomes suddenly acute.—Sight Saving Review, Winter, 1955.

Recent Film Additions Available From Department

Three films have been added to the film lending library of the State Department of Public Health. Two of the films pertain to rehabilitation of the handicapped; the third to vector control and sanitation.

THE FLY (Al-Dhubab), 16 mm., color, 30 minutes, has as its dramatic setting a hypothetical Arabian village. Produced by the Arabian-American Oil Company in cooperation with the Arabian Government, the film points out the link between over-all community sanitation and fly control.

Major emphasis is placed on the area-wide elimination of fly breeding sources. The film stresses need for an educated citizenry as the necessary ingredient if this objective is to be accomplished. The Fly is a human story, appealing to both the technical worker and lay citizen alike.

A DAY AT WASHINGTON BOULEVARD SCHOOL, 16 mm., color, 21 minutes, 1954, depicts the activities in a Los Angeles city school for handicapped children who are suffering from abnormalities of the bones and joints, diseases of the brain and nervous system, diseases of the circulatory and respiratory systems, dysfunction of the endocrine glands, and other noninfectious and noncommunicable diseases which prevent their attendance at regular schools. The film documents the educational program of the school and pictures the therapeutic techniques employed in an effort to help these youngsters overcome, as far as possible, their various handicaps.

THREE TO MAKE READY, 16 mm., B/W, 45 minutes, 1955. A drama of total rehabilitation showing the client-centered approach in returning the handicapped to happy and useful lives. In portraying the three true stories of a child, victim of a paralyzing disease, a teen-age girl, disabled at birth by cerebral palsy, and a man, head of his family, victim of an industrial accident, the film unfolds the combined efforts of doctors, therapists, teachers, social workers, psychologists and the many other skills of modern rehabilitation over a two-year period. Its purpose, according to the director of the Institute for the Crippled and Disabled, where the film was made, is to provide communities, government agencies, colleges and universities, organizations and institutions with a better understanding of the effectiveness, limitations and organizations of total rehabilitation.

Trichinosis in man and swine is probably more prevalent in the United States than in any other country in the world.—U. S. Public Health Service.

In the United States the suicide rate for males is approximately four times that among females.

Public Health Positions

Alameda County

Chief of Public Health Education: Salary range, \$448 to \$545 per month. Duties include responsibility for developing a general public health education program for the City of Berkeley in conjunction with the University of California. Master's degree in public health or its equivalent plus three years of full-time experience in public health education required. City reimburses for use of private car. Apply to Personnel Department, City Hall, Berkeley, California, TH ornwall 1-0200, by November 2, 1956.

Contra Costa County

Assistant Health Officer: Salary range, \$861 to \$1,033. Applicants must possess license issued by California Medical Examiners and have two years' full-time public health medical experience. Apply Contra Costa County Civil Service, Box 710, Martinez.

Pasadena City

Public Health Nurse: Salary range, \$380 to \$463. Registration as a public health nurse in California is required.

Sanitarian: Salary range, \$380 to \$463. Registration as a sanitarian in California is required. Apply Personnel Department, Room 200, City Hall, Pasadena.

Placer County

Sanitarian: Salary range, \$325 to \$395. Applicant must be registered sanitarian. Car required, 8-cent mileage allowance. Ruth M. Moldenhauer, M.D., Director of Public Health, Placer County Health Department, Auburn.

San Bernardino County

Medical Examiner: Salary range, \$713-\$866. To perform pre-employment and other physicals. Degree in medicine plus either one year of graduate work in public health or two years' experience in the practice of medicine.

Public Health Veterinarian: Salary range, \$483-\$587. Must possess a license to practice or be eligible for California registration.

Medical Social Worker-Consultant: \$417-\$507. Completion of a two-year postgraduate course in an accredited school of social work

and one year's full-time paid medical social work experience.

Public Health Nurses: \$378-\$460. Must possess a valid California certificate of registration as a public health nurse and California driver's license. \$417 to start in desert areas.

For further details, write San Bernardino County Civil Service Office, 236 Third Street, San Bernardino.

San Jose City

Public Health Nurse: Salary range, \$381-\$476. Experience determines salary range. Applicant must possess a registered nurse and public health nurse certificate. Private car allowance or city car available. Apply Miss Margaret F. Nelson, 285 SE. Market Street, San Jose.

San Mateo County

Vector Control Specialist: Salary range, \$415 to \$519. This is a new position in county service. Requires graduation from college with major work in engineering or the biological sciences and two years of experience in vector control work or closely related fields. Additional qualifying experience may be substituted for education on a year-for-year basis. A master's degree in one of the biological sciences may be substituted for the two years' experience. Examinations will be held on or about November 3, 1956.

Milk and Dairy Inspector: Salary range, \$392 to \$491. Requires certificate of registration as a dairy and milk inspector, issued by the California State Department of Agriculture. Examination to be held on or about November 3, 1956. Inquire Civil Service Commission, Courthouse, Redwood City.

Public Health Nurse: Salary range, \$371 to \$464. Combined county and V. N. A. generalized public health nursing program. Satisfactory completion of collegiate program for the preparation of public health nurses approved by the National League for Nursing and one year of experience required. Applicants lacking the one year's experience may be employed at \$351. Car required after first six months of employment. For additional information contact Chief, Public Health Nursing Service, Department of Health and Welfare, 225 37th Avenue, San Mateo.

Sonoma County

Public Health Nurse: Salary range, \$341-\$410. California public health nurse certificate required. Immediate employment in generalized program. County cars provided. Sonoma County Personnel Department, Courthouse, Santa Rosa.

Stanislaus County

Public Health Nurses: Salary range, \$333-\$400. Generalized program. County car furnished; California registration required.

Graduate Nurses: Salary range, \$304-\$349. Generalized field nursing program. County car furnished; California registration required.

For further information write to Irene Heindl, MD., Health Officer, P. O. Box 1607, Modesto.

GOODWIN J. KNIGHT, Governor
MALCOLM H. MERRILL, M.D., M.P.H.
State Director of Public Health

STATE BOARD OF PUBLIC HEALTH
CHARLES E. SMITH, M.D., President
San Francisco
MRS. P. D. BEVIL, Vice President
Sacramento
DAVE F. DOZIER, M.D.
Sacramento
L. S. GOERKE, M.D.
Los Angeles
HARRY E. HENDERSON, M.D.
Santa Barbara
ERROL R. KING, D.O.
Riverside
SAMUEL J. MCCLENDON, M.D.
San Diego
SANFORD M. MOOSE, D.D.S.
San Francisco
FRANCIS A. WALSH
Los Angeles
MALCOLM H. MERRILL, M.D.
Executive Officer
Berkeley

Entered as second-class matter Jan. 25, 1949,
at the Post Office at Berkeley, California,
under the Act of Aug. 24, 1912. Acceptance
for mailing at the special rate approved for
in Section 1103, Act of Oct. 3, 1917.

STATE DEPARTMENT OF PUBLIC HEALTH
BUREAU OF HEALTH EDUCATION
2151 BERKELEY WAY
BERKELEY 4, CALIFORNIA

\$341.
rtid.
gen-
So-
ourt-

\$333-
fur-

\$348.
unity
re-

rena
1607,

4.

0,
0,
es
for

TH

10, 10,